

W5YI

Nation's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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ARRL Petitions to Expand Ham Antenna Protections

Reports "blatant", "repeated" circumvention of FCC intent by local governments

On February 7, the American Radio Relay League (ARRL) filed an extensive petition with the FCC that seeks to strengthen protections for amateur tower and antenna installations. The petition reviews past favorable and unfavorable court rulings in antenna cases. It makes intricate legal arguments about why new rules are needed.

ARRL Executive Vice President David Sumner, K1ZZ, said the petition is intended to deal with "things that frustrate the intent of PRB-1 or tend to run up the cost" for hams. "We want the Commission to say flat-out that localities must find the least restrictive means" to deal with ham radio, he said.

K1ZZ said ARRL also hopes the FCC will "at least assume a neutral stance" on restrictive covenants that sometimes are imposed as part of a homeowner's deed.

The current FCC rule on local regulation of amateur antennas is contained in Section §97.15(e), "Station antenna structures". This rule states: "Except as otherwise provided herein, a station antenna structure may be erected at heights and dimensions sufficient to accommodate amateur service communications."

The rule continues:

"State and local regulation of a station antenna structure must not preclude amateur service

communications. Rather, it must reasonably accommodate such communications and must constitute the minimum practicable regulation to accomplish the state or local authority's legitimate purpose. See PRB-1, 101 FCC 2d 952 (1985) for details."

This rule is often referred to as "PRB-1" from the FCC proceeding that made the rule. Established as a result of a 1984 ARRL petition, PRB-1 has met with some success in reducing or eliminating onerous local restrictions on amateur antennas. ARRL said that although PRB-1 did not precisely delineate the limits of state and local land use jurisdiction over amateur antennas, "it was of tremendous benefit" to amateurs.

PRB-1 has not been a complete success: "As the case law developed...municipalities and land use regulators began to seize on the lack of specificity of the PRB-1 policy, and to take advantage of the often prohibitive cost to the individual of challenging land use decisions for the defense of an avocational, public service interest.

"Some municipalities, encouraged by language taken out-of-context in certain court decisions, have blatantly and repeatedly circumvented the Commission's intent in PRB-1," ARRL said. "Examples of this...are found in the denial of conditional use permits, which leave the radio amateur with the ability to erect an antenna only of

minimal, ineffective, height or dimensions, or in some cases, no antenna at all."

The petition asks the FCC to:

1. State that it has no less interest in the "effective performance of an amateur radio station" simply because it is in an area regulated by deed restrictions, covenants, or condominium regulations, rather than by zoning ordinances.

Previously, the FCC had publicly said that because it believes it has no jurisdiction over covenant restrictions, such restrictions "did not concern" it. ARRL noted that judicial enforcement of covenants - private agreements between buyers and sellers of land - is "state action" and thus is subject to the same limitations and conditions that are applied to municipal ordinances.

"Studies in recent years by League volunteers revealed that in many metropolitan areas, such as Dallas, Houston, Los Angeles and San Francisco, as well as in Washington, Orlando and other cities, virtually all new housing developments were subject to covenant regulation which would either prohibit or significantly restrict amateur radio antennas," the petition said. "These restrictions include prohibitions on outdoor antennas; prohibitions of radio transmitters, and prohibitions on installation of any structure without the prior approval of the architectural control committee or homeowner's association."

2. Clarify that the role of local government in applying FCC policy toward ham antennas is to make a reasonable accommodation for radio amateurs, "rather than to 'balance' their own local interests against the Federal interest in effective public service amateur communications."

ARRL insists that in establishing its antenna preemption policy, the FCC has already accomplished the necessary balancing.

Some recent court cases have held that local authorities may "balance" the communications needs of the amateur against land use needs, when considering a particular conditional use permit application. According to ARRL, these cases are almost always resolved in favor of the municipality's denial of the permit sought - thus the amateur is prevented from installing a functional antenna and support structure.

In one case, a Columbia, SC amateur was denied a use permit for a particular antenna structure. The zoning authorities found that he did not use his amateur station for emergency communications but only as an avocation, and thus was not entitled to the protection of PRB-1.

3. Establish an antenna height of 60-70 feet as the minimum that could be construed as "reasonable ac-

commodation" for amateurs. ARRL noted that such height will minimize interaction between amateur stations and home electronic equipment as well as providing reasonable antenna efficiency.

"Such a minimum permitted height should not preclude normal land use provisions for ensuring safety and minimum aesthetic impact of an antenna installation," the petition noted. "Such factors include rear yard location requirements, house bracketing and guying, or use of retractable antennas. ...Amateur antennas are permitted to be installed at up to 75 feet, for example, in Newport Beach, California, where property values are extremely high and development is dense. The only restriction is that such antenna support structures are to be retractable and kept retracted when not in use.

"Of course, amateurs who live outside densely developed metropolitan areas and who have significant land on which to locate antennas should be permitted to install antennas of greater height and number."

4. Clarify that the FCC preempts local regulations that impose on hams excessive costs for local approvals, or that impose overly burdensome conditions for land use authorizations.

Examples of these costs include a requirement for the services of a consulting engineer to determine if the antenna structure is safe, or to investigate the need for an antenna of particular height. The amateur applicant must pay for these services. ARRL pointed out that zoning authorities in northern California in particular have chosen this means of regulating antennas, which can make them cost-prohibitive.

The safety of the structure is established by the manufacturer's own engineers; and there already is much literature published on the subject of antenna height. ARRL appended a technical study, "Antenna Height and Communications Effectiveness," which found that high antennas outperform low antennas. The study also found decreased opportunity for RFI/TVI from high antennas.

Another cost is a requirement that amateur antennas be completely screened from view by installing mature plants. "The nature of amateur antennas is such that a full vegetative screening condition cannot be fulfilled cost-effectively, and might well aggravate rather than alleviate the visual impact of the proposed installation. The cost becomes a de facto prohibition," ARRL told the FCC.

5. Clarify that even if a municipality has denied an amateur a particular use permit or special exception, the municipality must still make reasonable accommodation for amateur communications.

Under PRB-1 it apparently is not clear what obligation a municipality has if and when it denies a particular conditional use permit for an antenna structure. In several cases, the local government denied request after request for permits, without explaining what it would be willing to accept.

"If a conditional use permit is denied, the amateur must at least be able to install an antenna at a reasonable height: not 17, nor 25, nor 35 feet, but a reasonable height on the order of 60 to 70 feet," the petition stated.

In the Columbia SC case, the local authorities offered to "compromise" by allowing the amateur to operate only at night. "The local jurisdiction simply has no authority to modify an amateur license on a de facto basis," ARRL said, "and the 'compromise' offered was properly viewed by the amateur as no accommodation at all."

6. Determine that conditional use permits are a valid way to regulate amateur antenna structures, but only as an adjunct to a reasonable minimum permitted height, and that specification of antenna dimensions independent of support structures is preempted.

7. Specify that safety-related land-use restrictions which significantly limit overall antenna height, or which determine by the size of the lot whether a functional amateur antenna can be installed, are invalid unless there is no less-burdensome alternative to accomplish the same purpose.

ARRL said that a number of local restrictions are unnecessary to ensure safety, for example, certain types of "setback" requirements. According to structural engineers, the petition stated, guyed antennas fall, if at all, within a radius not larger than 20% of overall height above ground level.

Here is the ARRL's proposed wording of Section § 97.15(e):

(1) State and local regulation of a station antenna structure must not preclude amateur service communications. Rather, it must reasonably accommodate such communications; it must constitute the minimum practicable regulation to accomplish the state or local authority's legitimate purpose; and it must not impose substantial costs on amateur service licensees.

(2) Any state or local antenna restriction or regulation which, on its face or as applied, would limit amateur station antennas to heights below 70 feet is presumed unreasonable unless the promulgating authority can demonstrate that such regulation is necessary to accomplish a clearly defined, and expressly stated health safety or aesthetic objective; that there is no less burdensome alternative to the regulation; and that

the Federal interest in efficient amateur radio communications from the amateur station at issue is otherwise reasonably accommodated.

(3) Any state or local authority, or other entity that wishes to maintain and enforce zoning, land use or other regulations or restrictions inconsistent with this section may apply to the Commission for a full or partial waiver of this section. Such waivers may be granted by the Commission in its sole discretion, upon a showing by the applicant that local concerns of a highly specialized or unusual nature create an overwhelming necessity for regulation inconsistent with this section. No application for waiver shall be considered unless it includes the particular regulation for which waiver is sought. Waivers granted according to this rule shall not apply to later-enacted or amended regulations by the local authority unless the Commission expressly orders otherwise.

The FCC has assigned Rulemaking No. 8763 to the petition. The preliminary 30 day comment period closes on March 21st.

FCC RAPS CB OUTBANDER

It took well over two years, but the FCC lowered the boom on a Lakewood, Calif. CB user. The case is unique for a couple of reasons. It is a CB case -- and so a very low priority at the Commission. It does not involve amplifiers, as do the vast majority of CB enforcement cases, but out-of-band operation instead.

Modification of a CB to transmit out-of-band voids the radio's FCC type acceptance, and thus invalidates anyone's authority to operate it.

Agents of the FCC's Los Angeles office discovered Danny Lee Coffield operating a modified Cobra CB on 27.7744 MHz in September 1993. They issued him a \$2000 *Notice of Apparent Liability* (NAL). The FCC later converted the NAL to a \$2000 *Notice of Forfeiture* after it was unpersuaded by Coffield's arguments against the NAL.

Coffield then petitioned for reconsideration -- virtually guaranteeing a lengthy delay -- and asked for cancellation of the forfeiture.

1. He claimed that FCC agents did not produce proper identification; therefore his constitutional rights were violated.

The FCC replied that they showed proper ID, "a well-established practice by FCC agents prior to conducting an inspection ...there is no evidence to indicate that the agents departed from their established practice."

2. He claimed that instead of being fined, he has the right to remove the unauthorized frequencies from the radio.

The FCC replied that "removal of unauthorized frequencies from a previously type accepted radio does not restore the radio's type acceptance or change the nature of the violation ...Once a CB radio's type acceptance becomes void as a result of modification to transmit on unauthorized frequencies, the only way to gain valid type acceptance is to remove the frequencies and resubmit the radio for type acceptance."

Of course, it is unlikely that a private individual would submit such a radio to the Commission's laboratory to undergo type acceptance procedures. It would be cheaper and easier to discard the radio and buy a new one.

"In any event," the Commission said, "because the petitioner was operating on an unauthorized frequency, he was operating an unlicensed radio station in violation of the [Communications] Act."

3. He claimed that the operation on 27.7744 MHz could have been caused by RF bleed. In other words, he claimed that he was operating legally on an authorized CB channel, and his operation bled over onto the unauthorized frequency.

In addition to observing him operating on 27.7744 MHz "with no indication that this operation was bleeding over from an authorized channel," the FCC found the radio had been modified to operate on that frequency.

Coffield has been ordered to pay \$2000 within 30 days. Fines not paid voluntarily within 30 days may be referred to the U.S. Attorney for a civil suit.

We do not think the U.S. Attorney's office is eager to try to collect CB or amateur fines due to FCC and Justice Department workload and priorities. We know that the FCC is seeking to establish a faster, more responsive enforcement system, but we have seen no evidence that it is in place.

(The Compliance and Information Bureau reorganization (see separate story) is mostly concerned with personnel and facilities, not better fine collections.)

Instead of paying the fine, Coffield could file an *Application for Review*, which could obtain additional delays.

Despite the claim of Commissioner Susan Ness that "...the Commission is no paper tiger; FCC rules must be obeyed, and noncompliance will draw meaningful sanctions," we are skeptical that most CB and amateur violators will be forced to pay anything in the end.

- **Mike Lamb, N7ML co-founder and CEO of Advanced Electronic Applications, Inc., (AEA) has returned from his Big Sky QTH in Bozeman, Montana to re-assume the duties of President of AEA. Lamb co-founded AEA in 1977 with the purpose of providing**

amateur radio enthusiasts high quality equipment.

The company slogan back then was "AEA ...brings you the Breakthroughs." Lamb's first love is bringing new, innovative products to amateur radio operators. His first priority will be to help facilitate the release of the recently announced DSP-232 and to follow it with more exciting new products.

Mike Lamb has been an amateur radio operator for nearly 40 years and is still extremely active today. His world class station sports six stacked tri-band yagis on a 190 foot rotating tower and three stacked 40 meter mono-band yagis on a 195 foot rotating tower. Recent on-the-air operation has given him an updated perspective of the current marketplace for Amateur Radio products. He knows where the industry has been ...and where it is going.

Lamb has enjoyed working with Amateur Radio dealers and other key contacts in the industry and is looking forward to renewing old friendships.
(Edited from a February 15 AEA Dealer Letter)

- **A group of hackers calling themselves the "Kevin Mitnick Liberation Front" broke into the Los Alamos National Laboratory computer system.** The New Mexico lab is best known for their work in the development of the atomic bomb. Kevin Mitnick, N6NHG is the ham hacker who was convicted last year of stealing 20,000 credit card numbers from America On-Line.

The hackers did not do any damage to the Los Alamos site, but used that address to stage an attack on the San Diego Supercomputer Center where they destroyed electronic mail and other files. They also tried to break into the computer of security expert Tsutomu Shimomura who was a key figure in tracking down Mitnick.

- **Industry publication, *Communications Week*, has named the Defense Department's top tech gun: Emmett Paige, Jr., W2IPG as one of the ten recipients of its 1996 Visionary Awards.** Vice president Al Gore received Honorable Mention "...for his leadership in putting the Information SuperHighway high on the nation's policy agenda."

Paige, a presidential appointee in 1993, is Assistant Secretary of Defense and holds the top communications and computer networking post in the Clinton Administration. Paige, a black three-star General, heads up the military's Global Command and Control System, a state of the art, high-security data-communications network and the Global Command Support System, which controls supplies to the armed forces. He previously was the commanding general of the U.S. Army Information Systems Command at Fort Huachuca, Arizona - home of the Army MARS.

EMERGING TECHNOLOGY

■ **Toll-free cellular telephoning is on the way.** A method has been developed whereby cell-fone users can make calls without paying for airtime. It will allow mobile callers to make wider use of their cellular phones - such as calling ahead to make a restaurant or hotel reservation while on the road. As it is now, cellular callers still must pay for airtime ...even when calling a toll-free "800" number. To make free calls, cellular users push the pound key on the cell-fone keypad and then dial 800.

■ **"One-size-fits-all" coming to the telephone business.** Arch enemies, AT&T and MCI are joining forces and will wage a combined assault on the local telephone business. They will share expenses necessary to build networks to provide local service. The venture will also permit third-party companies (such as gas and electric utility companies which already have billing systems in place) to offer a complete array of local, long-distance and mobile telephone service. But there is a larger reason for the joint venture. If AT&T and MCI can control local telephones, they will not have to pay billions of dollars in access fees to the local Bell operating companies. About half of all long distance revenue now goes to the local phone company over whose lines all calls are currently originated and terminated.

Sprint is taking a different route. They have formed revenue-sharing agreements with cable TV companies over whose lines local phone calls will originate. The alliance, called STV (Sprint Telecommunications Venture) requires that TV set-top boxes be converted for phone service. STV also will deliver local and long distance telephone service over wireless systems which are less costly.

The Bell telephone companies are not standing still. They are mapping out their long distance plans. The bottom line is that there will be more competition ...and ultimately lower local and long distance telephone costs to customers.

■ **Inexpensive, personal micropulse radar could be the next mass-market**

consumer hit. Battery-operated cigarette-pack size radar units can measure distances of 150 feet or less to an accuracy of a fraction of an inch. There are hundreds of applications ...such as locating underground pipes, wires, studs, automobile back-up radar, burglar alarms ...and all sorts of distance monitoring devices including measuring the water level in your toilet tank!

PERSONAL COMPUTING

■ **It seems that Tandy Corp. (parent of Radio Shack stores) have been talking about selling their 99 Computer City stores to CompuUSA.** That will not happen. Sales at Computer City have been declining at a time when sales have been booming at other chains. (CompuUSA had an 11% same-store sales increase during the Christmas quarter.)

Computer City president Alan Bush has now resigned and the number of new Computer City store openings have been cut back. Apparently Tandy's Radio Shack stores are the only ones making money. Computer City and Incredible Universe together lost \$50 million last year.

■ **The biggest story in PCs continues to be Apple Computers woes!** If you have been reading this newsletter, you know that Apple is in trouble and have hired new top management.

Previous CEO (Michael Spindler) and Chairman (Michael Makkula) are "out" and new CEO/President Gilbert Amelio is "in" (at \$2.5 million a year plus incentives!) There had been talk about Apple being bought by another company, but that also will not happen. Instead Apple will try to stage a comeback singlehandedly.

One of the biggest problems is Apple's shrinking share of the PC marketplace - now about 7.8% and declining. More than 90% of all PC's (and software) are now IBM-compatible - for which we can thank Microsoft. The PC world is really "Microsoft-compatible" since it was Bill Gates (and not IBM) who enriched and capitalized on BASIC and DOS. In 1980, IBM believed the future was in mainframes.

Now, Dr. Amelio has started to revive Apple. First he suspended its

quarterly dividend. Then, in a move designed to increase market share, he has licensed the Macintosh operating system to Motorola which will build inexpensive machines based on the PowerPC platform which can run both Macintosh and IBM software. Motorola can also sub-license the operating system to other computer makers.

You can expect to see many Macintosh clones around. We also heard that Apple will go into the scaled-down (under \$1,000) "info appliance" business. And they have an improved operating system on the way (code-named "Copeland.")

Apple computers are the machines mostly bought by schools and Compaq intends to renew efforts to increase its share of the education market now that Macintosh is stumbling.

■ **Motorola plans to produce low cost Macintosh PCs for the 1.2 billion population mainland China market** where only 50,000 computers operate at present. By contrast, the United States with one-fifth of China's population has tens of millions of PCs.

Chinese keyboards are a very big problem because there are 5,000 different characters. It takes six key-strokes to produce a single character. Motorola will use a keyboardless system based on handwriting. (IBM is working on a full speed speech recognition system that operates at 150 words-per-minute.)

INTERNET NEWS

■ **Get ready for the Intranet!** We all know that the Internet connects people around the world. Intranets connect people within a single organization. Several corporations are now using the private long-range networking concept as an inexpensive way to share information and data bases within their company. Only authorized users can get into an Intranet. Access to the general public is sealed off by a "firewall."

Microsoft will be giving away both Intranet-capable server programs and browsers as part of its Windows NT operating system. The strategy is aimed at Netscape which provides browsers free but charges for server programs. Many corporations, however,

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are paying for the Netscape browser so that they can obtain technical support.

■ **Now comes word that an entire country will utilize the Intranet firewall concept as a way of controlling information content.** Using filtering from Sun Microsystems, mainland Chinese PC users will have unlimited communications capability among themselves - but Internet information coming in from outside their country will be screened by a gatekeeper. The Xinhua News Agency will restrict inappropriate news and information ...especially political dissent and pornographic content. They will also get a cut of Internet access profits.

■ **Microsoft now has been converted to the Internet religion.** They have seen the light and have taken a 180 degree turn. Microsoft will now support common rather than propriety protocols. They have abandoned their proprietary "Blackbird" web publishing tool and will now fully get behind the Hyper-Text Markup Language. HTML is the universal language used on the World Wide Web.

The idea behind "Blackbird" was that content created with the product could only be read on the Microsoft Network and not other online services or the Web. Microsoft's new "Internet Studio" will now output standard HTML file formats. And the Microsoft Network will now be "repositioned" as an Internet access service.

They will also unveil "entry level" merchant server secure software designed to handle Internet commerce - including financial transactions and create virtual stores. Wal-Mart Stores will be one of the first users. Another new Microsoft tool (called "Merchant Workbench") lets customers customize the appearance of their online service, manage transactions and create customer profiles based on their purchases.

Netscape's entry-level server software does not provide for encryption-protected Internet financial transactions. And no longer is Microsoft thinking about charging a transaction fee when businesses and banks use their software.

Microsoft recently purchased Vermeer Technologies, Inc., maker of the easy-to-use FrontPage Web publisher. They supposedly paid \$135 million for

the company. Microsoft intends to make Website authoring and management a mass market pursuit.

Rumors are that more acquisitions aimed at making Microsoft an Internet powerhouse are on the way. Brad Silverberg (the high-powered manager who previously headed up the Windows 95 project) now is in charge of Microsoft's Internet Division.

Microsoft said they would be upgrading their Internet Explorer to surpass the capabilities of Netscape which has an 80% browser market share.

■ **If you get a chance, check out the ESPNET SportsZone on the Web.** It draws 140,000 users on a typical day. ESPN is looking to do on the Web, what it did on cable ...being the first and the best sports only-oriented new media service. Eighty people work full time bringing the "Zone" (as it is called) URL is: <http://espnet.sportszone.com>

■ **Electronic car buying! Do not purchase a new car unless you first try the "Auto-By-Tel" Website!** A former (Ford/Chrysler) dealer has come up with an idea for selling cars that is taking off! Even Microsoft has added an icon to them on the Microsoft Network's "CarSource."

It costs a car dealer big bucks to maintain, staff and advertise an auto dealership. But not Peter Ellis. His cost is basically nothing! Here's how it works. He simply charges 1,200 dealers across the country a monthly referral fee and he sells their cars on-line at wholesale. You say which car you want, and within a day or two you get a phone with the lowest possible price.

You can even check out every car at each automakers Website ...then go to: <http://autobytel.com>. Dealer new car costs are located at: <http://www.eneews.com/magazines/edmund> ...and Blue Book values at: <http://kbb.com>. In a nutshell, there are no longer any secrets! The worst way to buy a car is getting to be to visit a dealer's lot.

■ **Changing partners department - MCI has effectively pulled the plug on its new consumer on-line service** it was going to launch with media mogul Rupert Murdoch's News Corp. MCI is in the process of reclaiming InternetMCI which will eventually be offered as a customized version of the Microsoft

Network. It will be called "MSN from MCI." Icons will also be built into Microsoft's Windows 95 operating system that will allow users to easily order MCI products. Thus MCI gains access to 120 million users of Microsoft software and Microsoft gets to sell 20 million MCI customers. MCI will now push Microsoft's Internet "Explorer" browser rather than the Netscape "Navigator" presently available with InternetMCI.

■ **K1MAN take note! On the air only four months, "NET.RADIO" is the first international broadcast radio station to operate solely from the Internet.** There are other radio stations broadcasting from the Internet, of course, but NET.RADIO is the only one that does not also broadcast over-the-airwaves.

The fidelity of their music station is admittedly not the best, but it will improve as technology advances. The big advantage of Internet broadcast stations is low start-up cost (about 90% less) and red tape (you don't need an FCC license.) You also do not need a transmitter or an antenna! Their website is at: <http://www.netradio.net>

■ **Andy Grove, CEO of Intel, the \$50 billion microprocessor company** says he is not worried about the huge potential popularity of the \$500 (or less) Internet-only appliance. He calls it a "frozen system" - a device that can only do one thing. Personal computers can do everything!

ComputerWorld, the weekly PC trade publication reports that Oracle's chairman and CEO Larry Ellison "...expects commitments from no fewer than a dozen hardware manufacturers - most of them Asian - to build Internet appliances that cost \$495, which he calls network computers or NCs."

Supposedly four companies from Taiwan (including Acer, Taiwan's largest PC maker), and two each from Japan (NEC and Toshiba) and South Korea (Samsung and LG Electronics), North America (Compaq and Intel) and Europe (Olivetti was one of them) are interested in the NC. Ellison said the first desktop NCs will ship in September. One company that does not appear interested in network computers is Microsoft whose claim to fame is operating systems which the NC does not use.

■ **Some industry experts say an Internet "meltdown" is coming.** Reason? Internet traffic is doubling every nine months. So far, the net - although slowing down - has been reasonably able to keep up. Some say it eventually will not be able to since Internet growth is far outstripping advances in computer power. At present, users pay only to access the Internet - not for the traffic they generate ...or the congestion they cause. Researchers believe that Internet pricing will have to change to a system that rewards efficient usage.

■ **NBC hopes that many user's sitting in front of their PC's instead of their TV screens this summer. "Intercasting" - a new Intel interactive video technology involves equipping computers with boards that allows them to receive TV programs and data sent over a television broadcast or cable signal's vertical blanking interval (VBI).** The video is viewed in real time with complementary data stored on the PC's hard drive. The information can also be picked up directly from the Internet's World Wide Web. Both Packard-Bell and Gateway 2000 hope to have "Inter-cast" enabled PCs in the hands of consumers in time for the Summer Olympics this July. Inter-cast content will be written in HTML Web language. Broad-caster-supplied content will be delivered in a file to a user's hard drive over the vertical blanking interval. "Inter-casting" has many applications such as providing telecast-related historical, geographic, financial, statistical and advertiser-related data.

■ **Remote and cyberspace banking and bill paying is accelerating.** The branch bank will eventually be in your living room. Currently less than 1% of all banking is processed from the home. But that is about to change. Intuit Corp. is now providing home banking services to America On-line and 37 large banks have agreed to use its Quicken software. Microsoft has signed up 31 banks for its Money program. And both Intuit and Microsoft will offer banking over the Internet.

■ **"Ticketmaster" is quietly getting ready to roll-out a national ticket ordering service on the Web.** It begins this month in Seattle. You'll even be able to pick your seat. Tickets (with a

12% service charge) will be mailed or available at the box office. The service will eventually be available in 45 markets covering more than a thousand events. Users can give their credit card number on-line - or send information in advance to Ticketmaster for later use.

■ **Privacy on the Internet is the topic of much discussion.** How much of what you do on-line should be public information? The Web has the capability to present a wealth of information to potential marketers who are eager to improve the productivity of their mailing lists. The government is already looking at how personal data is bought, sold and used. The big question is, what personal data - easily collected online - is public information.

■ **Big brother no longer is watching.** Netscape has now agreed to remove a file called "cookies.txt" from its Internet browser. This file tells merchants what on-line customers do while in their virtual stores. This feature was built in to the Netscape Navigator to allow website stores to be able serve up goods tailored to customer needs or desires the next time they visit. It sounded like a great idea, but people simply don't like being "followed."

■ **The Feb. 26 issue of Forbes magazine had some good advice on how to buy a personal computer.** "Buy hardware with more power than you think you'll ever need -- twice the chip speed, three times the hard disk space, and four times the random access memory (RAM) is a good rule of thumb." On the other hand, buy low-end software. You can usually "...do more with less [and] you'll spend less time pouring over the manual..."

■ **"Getting on with life" department - WordPerfect users are relieved now that Canada's Corel Corp., is the new owner of WordPerfect word processing.** Corel (which paid Novel close to \$200 million for WordPerfect) is now the second largest software company ..after Microsoft.

■ **The FCC's Interference Handbook is available for downloading from the FCC at:** <http://www.fcc.gov/bureaus/compliance/www/tvibook.html> This book contains information for television owners as well as radio transmitter

operators. Also a list of electronic equipment manufacturers where you can get help.

CONSUMER ON-LINE NEWS

■ **It's shakeout time! 1996 will go down as the year traditional on-line consumer services peaked.** Its a new (Internet) direction from here on out.

Sears has now publicly said it wants to get rid of Prodigy, the on-line service it owns with IBM. And IBM does not seem too eager to snap up Sears share. Together they have invested \$1 billion, but have never made a profit. Prodigy's value is said to be around \$100 million.

CompuServe, owned by H&R Block, Inc. (the tax people) is in the process of spinning off its on-line information service.

MCI has all but ended its wholly owned on-line subscription service venture with News Corp. They have fired 189 people and headed to greener (Internet-based Microsoft Network) pastures.

And now comes word that America On-Line is having talks with Internet start-up, Netscape Communications about a possible affiliation.

The reason for all of the activity, of course, is the surging popularity of the "bare bones" World Wide Web - the graphical portion of the Internet.

Prodigy, CompuServe and America On-Line will now branch out and become Internet access providers. CompuServe's Sprynet will cost \$19.95 for unlimited service, AOL's Global network Navigator (GNN) service will be \$14.95 for 20 hours. Prodigy will test market a new Internet Access Service at \$1.00 per hour with no minimum fees. If successful, a national roll out is planned for midyear.

Tele-Communications, Inc. (the giant cable-TV firm) is in the process of launching its "@ Home Internet Services" as well as becoming a cable-delivered Internet Access Provider. We heard that unlimited service will cost \$29.95 - which seems high in today's competitive environment. On the other hand, cable modems (Motorola's CyberSurfer) can deliver the Internet a lot faster. One thing is certain. The on-line business is changing.

SATELLITE COMMUNICATIONS

■ The DBS scene is heating up also. **PrimeStar, DirecTV and USSB will now be joined by three more DBS broadcasters.** Analysts say there will be 18 million subscribers by 2000.

AT&T paid \$137.5 million for a stake in DirecTV which already has over \$1.25 million subscribers. They will offer the service to its 90 million customers and finance the 18" dish through its AT&T Universal Card.

MCI paid \$682.5 million at auction for the last available slot with full continental U.S. coverage. They will launch a DBS entertainment, business and data service within two years.

EchoStar paid \$52.3 million for 24 less valuable DBS channels whose "footprint" can't reach the north east. Its stock jumped 27 percent in one week. Their satellite is due to be launched in three months by China's Great Wall launch service which has a history of failures.

The problem is that there is just so much general interest programming and many will offer the same thing. On the other hand, with 150 channels, you'll see some narrow special interest programming and a lot of pay-per-view.

■ **Satellite-based consumer phone calls, fax, data and paging came a step closer last week as "Big LEO"** Iridium, Inc., raised another \$315 million. A "Big LEO" is a constellation of communications satellites in low-earth orbit. Iridium plans a global "network in the sky" of 66 satellites.

WASHINGTON WHISPERS

■ **We are still hearing rumblings about the so-called "Internet Tax."** Supposedly the FCC is floating proposals to tax Internet Service Providers (ISP) since the Internet is robbing long-distance carriers of revenue.

ISPs are being targeted because they are primarily entrepreneurial operations that are not organized. We even heard that a *Notice of Proposed Rule-making* is being considered.

Some state treasurers are already eyeing the Internet as a new source of funding. Spokane, Wash., is imposing

a 6% tax on gross ISP receipts and Texas providers are subject to a 1.4 % telecommunications tax. The Florida Revenue Dept., is looking into charging a 2.5% gross receipts tax and a 7% sales tax on telecom services including Internet access and e-mail.

■ **And collecting a sales tax on goods and services sold on the Internet by firms located outside their state** is being considered by other states. The tax will be due - even if the state in which the marketer resides does not have a sales tax.

In 1992, the U.S. Supreme Court ruled that states can tax direct marketers only if the companies have a physical presence or representative in that state. In California, an Internet Review Commission is in the process of being formed to address the impact of out-of-state firms selling goods on-line.

■ **Getting more done with less! The new Telecommunications Act has put much pressure on the FCC** since their work has dramatically increased but their budget has not. The FCC asked for additional funding, but received \$8.5 million less than the \$185 million Congress gave the FCC last year.

Meanwhile, the FCC's spectrum auctions continues to be the Clinton administration's biggest cash cow. So far the agency has raised over \$15 billion for the U.S. treasury.

■ **Internet censorship blocked - The most controversial provision in the Telecommunications bill, indecency on the Internet - has already been put on hold by a federal court.** The new telecom legislation had made it a federal crime to expose minors to indecent or offensive material.

The new law defines indecency as "...any comment, request, suggestion, proposal, image or other communication that, in context, depicts or describes in terms patently offensive as measured by contemporary standards, sexual or excretory activities or organs." The penalty for violations is up to two years in prison and a \$250,000 fine.

The Christian Coalition said controls were necessary to protect children. The new statute was based on over-the-airwaves law - but the Internet is closer to printing (which is protected by the

First Amendment) than broadcasting.

A federal judge in Philadelphia blocked enforcement of the law when the American Civil Liberties Union (and 19 other groups) argued that there should be no more restriction on Internet on-line copy than there is on books. In issuing a temporary restraining order, U.S. District Judge Ronald L. Buckwalter said that while "indecency" was described in the law, the word "indecent" was unconstitutionally vague and not defined.

There are several software programs available that parents can use to block access to certain websites and consumer on-line service programming. Among them are Cyber Patrol, Cyber-Sitter, Net Nanny and Surf Watch. Some list prohibited sites, and can selectively block chat rooms, news groups and other possible offensive areas. Others contain a dictionary of unsavory words and phrases.

AMATEUR RADIO

● **Shuttle Missions - There are seven more space shuttle flights scheduled for this year** but only five will carry SAREX (the Shuttle Amateur Radio Experiment). (*=Not SAREX flights)

Mission	Shuttle:	Month:	Days
STS-75*	Columbia	Feb. 1996	16
STS-76	Atlantis	March 1996	9
STS-77*	Endeavour	May 1996	9
STS-78	Columbia	June 1996	16
STS-79	Atlantis	Aug. 1996	9
STS-80	Columbia	Nov. 1996	16
STS-81	Atlantis	Dec. 1996	9

STS-76 (due to lift off on March 21 at 0834 UTC - 3:34 a.m. EST) will carry SAREX and four ham astronauts to the MIR (Russian) space station. Pilot Richard Searfoss KC5CKM and Mission Specialists Linda Godwin N5RAX and Ron Sega KC5ETC will be joined by Shannon W. Lucid (a lady astronaut) who has not yet received her amateur call sign. Searfoss, Godwin and Sega have all operated amateur radio during previous shuttle flights. Five schools have been selected to get their questions answered by the Astronauts.

Shannon Lucid will spend the next five months on MIR and will be picked up later by the STS-79 mission ...also a SAREX flight with Jay Apt N5QWL and Jerry Linenger KC5HBR aboard.

CANADIAN HAMS PONDERING CW REQUIREMENT

Radio Amateurs of Canada (RAC) through their national journal, *"The Canadian Amateur"* have an ongoing debate underway concerning Morse code proficiency and alternative (to CW) licensing schemes. Increased technical ability seems to be the favored choice. The Feb. 1996 issue contains some interesting views by VE1RN in the *"Club Corner"* column:

"While we are fighting amongst ourselves about whether we should keep the CW requirement to obtain full band and mode privileges, the world is passing us by. If we really want to keep our fraternity exclusive, instead of CW, why don't we require new Amateurs to pass a computer entrance exam. ...These are exciting times. Amateur Radio began as an experimental service and I believe that computers will allow us to return to the experimental days. ...Computers are giving us Amateurs the opportunity to experiment with new digital modes that will allow us to use our limited spectrum in a more efficient way. ...I am convinced that the best way to attract new young Amateurs into our hobby is through computers. In order to do this, we need to make it look attractive for them."

The RAC's *Monthly News Bulletin* mentions that the IARU has established an ad-hoc committee named *"The Future of the Amateur Service Committee"* (FASC) to form a position on eliminating Morse Code proficiency in order to operate below 30 MHz. This committee is chaired by Michael Owen VK3KI and the members are: Larry E. Price W4RA, David Sumner K1ZZ, John Bazley G3HCT, Tom Atkins VE3CDM, Terry Carrell ZL3QL and Dick Baldwin W1RU.

FCC ENFORCEMENT REORGANIZATION FINALIZED

The FCC has finally released its reorganization plan for the Compliance and Information Bureau (CIB), formerly the Field Operations Bureau.

This bureau is responsible for most FCC interaction with the general public, including, of course, station inspections, rule compliance and elimination of interference problems (the agency is looking for ways to shift some of the interference investigation burden to private industry).

The FCC previously announced the reorganization, but it could not actually take place until now. Key elements of the reorganization include:

- FCC will automate its HF direction-finding network by installing new technology that can be controlled from a single location.
- FCC will establish a "complaint and inquiry intake center" with a toll-free (800 or 888) number (maybe 1-888-CALL-FCC).
- FCC will close offices in several parts of the country and retain two technical staff in those locations as

"resident enforcement agents (REA)".

- FCC will "provide the remaining offices with smaller, more easily transportable equipment to permit faster response to problems in areas where we no longer maintain resident staff or where we need additional resources to deal with large-scale problems, by providing updated technological tools to keep up with the changes and explosive growth in telecommunications, such as operations in bands in which we have not previously licensed mobile communications and which our existing equipment cannot currently monitor."

In view of the cutbacks and rollbacks affecting the FCC, Commissioner Andrew Barrett commented:

"It is clear by the sentiments and actions of Congress that budgetary cuts are imminent and that further personnel reductions will be necessary. ...

"I am deeply troubled that individuals who have worked with the Commission for years and who have been effective and have acted responsibly as the agency presence for parts of the country, will be unemployed as a result of this decision. ...

"I am not certain that the automation being touted by the Commission as an efficient and, in the long run, a less costly solution to the budget problems will necessarily provide an acceptable solution to the reduction of field staff. It has always been my belief that there are times when a machine can be no substitute for a human being."

FCC WANTS INPUT ON IMPROVEMENTS

The Commission has released a Notice of Inquiry in Plans and Policy (PP) Docket 96-7, inviting the public to comment on virtually any aspect of the Commission's routine operations. Here is a summary of some of the questions for the public:

- Which FCC functions could be eliminated?
- How could the FCC reduce the amount of paperwork it requires?
- What functions could be privatized? What are the advantages or savings?
- What FCC Rules are burdensome, repetitive or irrelevant?
- Are there areas in which private self-certification or self-regulating organizations could replace advance FCC review and approval?
- How can computers, electronic filing and the Internet improve FCC processing?
- Should the FCC allow filing of comments via the Internet, on disk, or require commenters to include E-mail addresses?
- What FCC operations have serious delays that result in significant unnecessary costs or other adverse impacts?
- How could the FCC better meet customer service

standards and goals?

Comments in PP Docket 96-17 are due March 15, 1996, with replies due March 29, 1996. To file formally, you must provide an original and four copies of all comments. If you want each Commissioner to receive a personal copy, file an original plus nine copies. (As always, we note that this does not obligate the Commissioner to read or retain your comments.) Mail comments to Federal Communications Commission, Washington DC 20554.

REPORT ON HAM STATION RF MEASUREMENTS

The FCC has released the final report of its examination of the RF field levels at amateur stations, based on measurements made in 1990. Copies are available from the FCC's Internet servers, www.fcc.gov and [ftp.fcc.gov](ftp://ftp.fcc.gov). Here are excerpts from the findings:

"There are more than 500,000 licensed amateur radio operators in the United States and many more throughout the world. Consequently, there is potential for human exposure to radiofrequency (RF) electromagnetic fields due to amateur radio stations.

"Because of its responsibilities under the terms of the National Environmental Policy Act (NEPA), the Federal Communications Commission (FCC) has an interest in ensuring that FCC-regulated transmitters do not expose the public to levels of RF energy in excess of accepted RF safety guidelines. ...

"In order to obtain data on the potential environmental impact of transmissions from amateur radio stations, personnel from the FCC and the U.S. Environmental Protection Agency (EPA) measured electromagnetic fields at several stations in southern California in July, 1990. Measurements of electric and magnetic field strength were made in areas near antennas and transmitting equipment in order to determine potential levels of exposure to RF radiation for amateur operators and other individuals who may be present in the immediate vicinity of amateur stations. Some measurements of operator exposure to 60-hertz magnetic fields were also made because of interest by the EPA in the extremely low-frequency (ELF) electromagnetic environment. ...

"Antennas used at the stations included Yagis, Quagis, "inverted-V" dipoles, horizontal dipoles, vertical radiators, VHF-discons, and others. Primarily, HF and VHF frequencies were used for transmissions. Operating powers ranged from below 100 watts to as much as 1400 watts. ...

"Measurements were made at one or two meters above ground at various distances with respect to the antennas studied. Measurements were also made at various locations inside buildings and at operator locations ("ham shacks"). All measurements were made

while operators transmitted in the "key down" position, i.e., continuous wave transmissions without modulation. Although this would not be a normal operating mode, it was used in order to obtain a stable reading on the measuring instruments.

"Although current FCC policy categorically excludes amateur operators from routine evaluation for compliance with RF guidelines, this policy is one of several items being reconsidered in the recent proposal to adopt new guidelines. ...ANSI/IEEE limits specified for 'uncontrolled environments' are used for comparison with measurements in publicly accessible areas, and limits specified for 'controlled environments' are used for comparison with measured values obtained at the amateur station or 'ham shack.' ...

"'Publicly' accessible areas are defined here as areas, other than the 'ham shack,' where it is reasonable to assume that persons who might not have control or knowledge of their exposure could have access. This is roughly equivalent to the definition of an 'uncontrolled' environment given in the ANSI/IEEE guidelines. Stricter exposure limits are specified for such situations than for "controlled" environments. According to the guidelines, an amateur operator would be in a 'controlled' environment and subject to less restrictive limits.

"The exposure guidelines are frequency-dependent and recommend the strictest exposure limits for VHF frequencies, since these are the frequencies where the highest specific absorption rates (SARs) occur for human beings. Therefore, although some measured field strengths at HF frequencies may be relatively high, the percentage of the exposure limits may be less than for lower field strengths measured at VHF frequencies.

"According to the new ANSI/IEEE exposure guidelines, it appears that vehicle-mounted amateur antennas can create the greatest possibility for significant exposure in publicly accessible areas. In fact, in several cases involving vehicle-mounted antennas, the maximum levels measured approached or exceeded the electric field strength limits recommended for 'uncontrolled' environments. This also occurred in at least one other case, a center-fed dipole at Station E.

"Amateur radio facilities can generate electric and magnetic fields near antennas and transmitting equipment that, in some cases, might approach or exceed recommended limits for human exposure. For most of the stations surveyed, RF protection guidelines for field strength and power density were not exceeded in accessible areas.

"However, at higher power levels or with different facility configurations, higher exposure levels cannot be completely ruled out. Even though this study was designed to evaluate typical stations, it represents only a small sampling of many possible amateur radio facilities."